Amendments to the Specification:

Please replace the abstract with the following amended abstract:

~~An efficient~~ method and system is provided for computing lithographic images that may take~~takes~~ into account non-scalar~~vector~~ effects such as lens birefringence, resist stack effects, ~~and~~ tailored source polarizations, and ~~may also include~~ blur effects of the mask and the resist. ~~These effects are included by forming a~~A generalized bilinear kernel is formed, which is independent of the mask transmission function, and which may~~ean~~ then be treated using a decomposition to allow rapid computation of an image that includes such non-scalar effects. ~~Dominant eigenfunctions of the generalized bilinear kernel can be used to pre-compute convolutions with possible polygon sectors. A mask transmission function can then be decomposed into polygon sectors, and w~~Weighted pre-images may be formed from a coherent sum of ~~the~~ pre-computed convolutions of the dominant eigenfunctions of the generalized bilinear kernel with ~~for~~ the appropriate mask polygon sectors. The image at a point may be formed from the incoherent sum of the weighted pre-images over all of the dominant eigenfunctions of the generalized bilinear kernel. The resulting image can then be used to perform model-based optical proximity correction (MBOPC).